AS5300 Uitbellen met ISDN/asynchrone (uitgaande DDR)

Inhoud

Inleiding

Deze configuratie heeft een AS5300 met vier Primaire Rate Interfaces (PRI's) en ondersteuning voor 96 modemoproepen of een groot aantal ISDN-oproepen. Het is geconfigureerd met vier PRI's om uitgaande verbindingen van asynchrone en ISDN toe te staan. Statische dialerkaarten worden aan de dialingzijde ingesteld voor elke ISDN/asynchrone verbinding. De statische IP routes worden gebruikt bij beide uiteinden van de verbinding om de onnodige overheadkosten van een dynamisch Routing protocol te vermijden. Voor het toevoegen van een externe locatie moet er een dialerkaart, gebruikersnaam en een statische route voor de nieuwe bestemming aan de kant van het kiezen worden toegevoegd. Alle externe knooppunten hebben vaste IP-adressen.

Voordat u begint

Conventies

Zie de [Cisco Technical Tips Convention](#) voor meer informatie over documentconventies.

Voorwaarden

Stap 1 - Het configureren en controleren van de client voor Uitbel is correct ingesteld.

Configuraties van uitbellen - apparaat waarmee deze AS5300 wordt uitgezet op:

- PRI: Het configureren van een toegangsserver met PRI's voor uitgaande asynchrone en ISDN-oproepen - Gebruik de centrale site AS5300 Series router (hostname AS5300) die in het document beschikbaar is.
- BRI voor het ontvangen van inkomend telefoontje van AS5300: Configuratie van ISDN Dial-on-Demand Routing (DDR) met snelkiezerprofielen - Gebruik de Cisco 2503-routerconfiguratie (hostname Remote ISDN01) die in het document is meegeleverd.
- Async voor ontvangst van inkomend telefoontje van AS5300: Het configureren van interfacegroep-asynchrone met snelkiezerprofielen - Gebruik de client-site Cisco 2511 router (hostname RemoteAsync01) die in het document is meegeleverd

Stap 2 - Controleer dat de Telco-circuits correct werken. U kunt de opdracht **ISDN-status tonen** gebruiken om te controleren of het BRI- of PRI-circuit correct werkt. Raadpleeg het document [Met de bestandsindeling voor de ISDN-status voor BRI](#) probleemoplossing voor meer informatie. U moet ook het T1/E1 PRI circuit voor uitgaande oproepen inschakelen. Neem contact op met uw Telco om deze informatie te verifiëren.

Gebruikte componenten

De informatie in dit document is gebaseerd op de onderstaande software- en hardwareversies.

- Cisco AS5300, Cisco 2511 en Cisco 2503 router
- Cisco IOS-softwarerelease 12.2(10b)E
- Een externe asynchrone modem

De informatie in dit document is gebaseerd op apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als u in een levend netwerk werkt, zorg er dan voor dat u de potentiële impact van om het even welke opdracht begrijpt alvorens het te gebruiken.

Achtergrondinformatie

In bepaalde situaties kan het nodig zijn om het T1/E1 PRI-circuit te gebruiken voor netwerkverbindingen. Dit helpt ervoor te zorgen dat de client of het kantoor waar het T1/E1 PRI-circuit uitbellen een beveiligde identificatie is, in plaats van een onbekende gebruiker die inbel met de dubbele gebruikersnaam en het wachtwoord voor het netwerk.

Verwante producten

Deze configuratie kan worden gebruikt met elke router die T1- of PRI-kaarten heeft. Daarom kan elke AS5xxx-seriemuter met een T1- of PRI-kaart deze configuratie gebruiken. Cisco 2600 en 3600 Series routers kunnen ook worden geconfigureerd om ISDN-oproepen te verzenden met een T1/PRI WAN-interfacekaart (WIC) of netwerkmodule.

Deze configuratie kan ook worden aangepast voor gebruik met E1- of PRI-poorten. Configureer de E1-controller met de linecodering, vormgeving en andere fysieke eigenschappen die door de Telco zijn geleverd. De D-kanaalconfiguratie (interface-seriële x:15 voor E1s) is gelijk aan de configuratie die hier wordt getoond.

Configureren

Deze sectie bevat informatie over het configureren van de functies die in dit document worden beschreven. Voor dit netwerk hebt u het volgende nodig:

- Het type PRI-switch, de opmaak en de lijncodering.
- De gebruikersnamen en wachtwoorden van alle externe knooppunten waar u in gaat draaien. Zelfs als u later TACACS+ of RADIUS wilt toevoegen, voeg een paar namen toe aan de router om de lijnen te testen.
- Het IP-adresseringsschema.

N.B.: Als u aanvullende informatie wilt vinden over de opdrachten in dit document, gebruikt u het Opdrachtplanningprogramma (alleen geregistreerd klanten).

Netwerkdiagram

Dit document gebruikt de netwerkinstellingen die in het onderstaande schema zijn weergegeven.
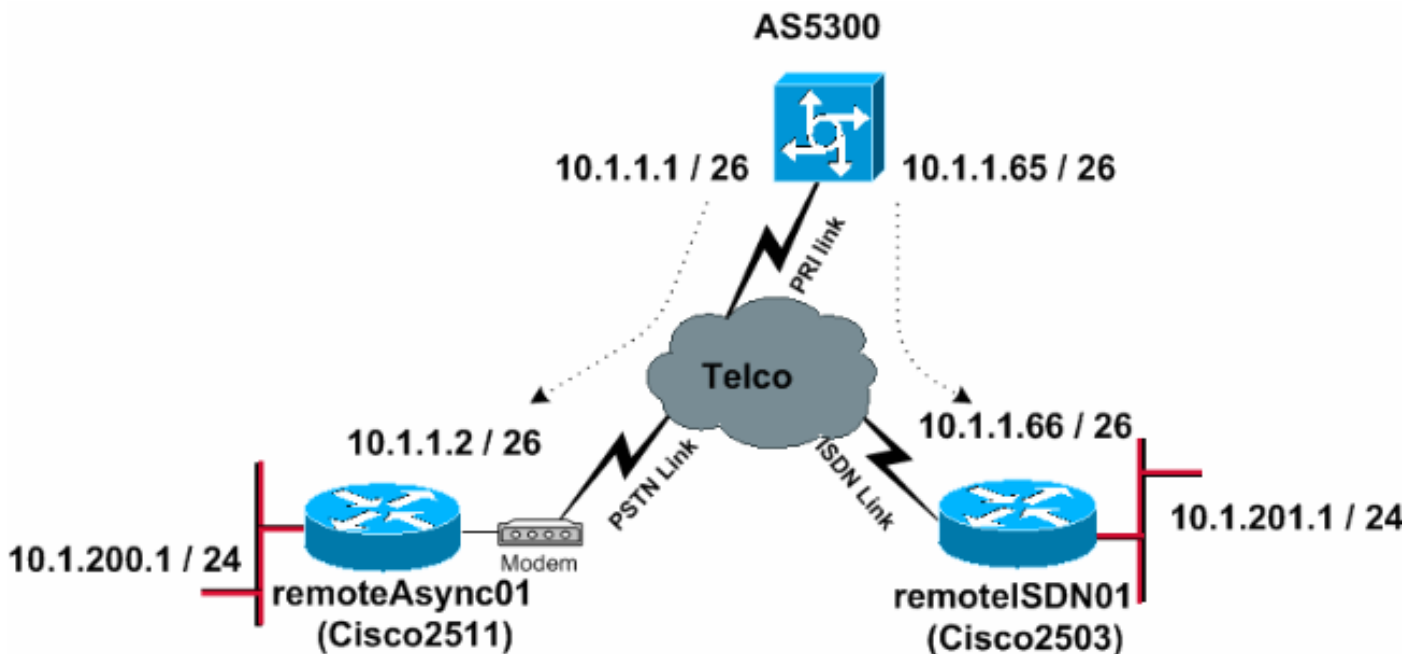
Configuraties

Dit document maakt gebruik van de onderstaande configuraties.

- AS5300
- RemoteAsync01
- Remote ISDN01

AS5300
| ```
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname AS5300
``` |

```
!
!
username remoteISDN01 password 0 xxxx
username remoteAsync01 password 0 xxxx
!--- Usernames for local authentication of the call. !--- The client presents the username/password !--- and the AS5300 authenticates the peer. !--- This local database of usernames and passwords are !--- compared when chap PPP authentication is negotiated !--- between the AS5300 and remoteISDN01, remoteAsync01 routers. ! isdn switch-type primary-5ess !--- Switch-type for this AS5300. Obtain this information from the Telco. chat-script kelly "" "atdt\T" TIMEOUT 60 CONNECT \c !--- A chat script is a string of text that defines the handshaking !--- that occurs between the router and the modem to sucessfully !--- handshake with the destination. !--- In this chat-script, "kelly" is the chat-script name. !--- The expect string "" is the null from the destination. !--- And the send string "ATDT\T" is to instruct the modem !--- to dial the telephone number in the dialer string command, !--- which is 9996200 in the Interface dialer 1 !--- TIMEOUT 60 CONNECT \C - waits up to 60 seconds for the input string "CONNECT", !--- and \C is an escape sequence to end the chat-script. !--- Refer to the Modem-Router Connection Guide and Chat-script for more information. ! controller T1 0 !--- T1 PRI physical controller configuration. framing esf !--- Framing for this T1 is Extended Super Frame (ESF). !--- Obtain this information from the Telco. clock source line primary !--- T1 0 is the primary clock source for this AS5300. !--- Clock source must be specified for the timing !--- and synchronization of the T1 carrier. linecode b8zs !--- Linecoding for this T1. Obtain this information from the Telco. pri-group timeslots 1-24 !--- For T1 PRI scenarios, all 24 T1 timeslots are assigned !--- as ISDN PRI channels. The router will now automatically create the !--- corresponding D-channel: interface Serial 0:23. ! controller T1 1 framing esf clock source line secondary 1 linecode b8zs pri-group timeslots 1-24 ! controller T1 2 framing esf clock source line secondary linecode b8zs pri-group timeslots 1-24 ! controller T1 3 framing esf clock source line secondary linecode b8zs pri-group timeslots 1-24 ! interface Ethernet0 ip address 171.68.186.54 255.255.255.240 no ip directed-broadcast ! interface Serial0:23 !--- D-channel configuration for T1 0. no ip address no ip directed-broadcast encapsulation ppp dialer rotary-group 2 !--- T1 0 is a member of rotary group 2. !--- The rotary group configuration is in interface Dialer2. !--- This rotary group command enables the Dialin and Dialout for ISDN calls. isdn switch-type primary-5ess isdn incoming-voice modem !--- All incoming ISDN analog modem calls that come in !--- on an ISDN PRI receive signaling information !--- from the ISDN D channel. The D channel is used for !--- circuit-switched data calls and analog modem calls. !--- This enables all incoming ISDN voice calls to access the call !--- switch module and integrated modems. !--- Calls are passed to the modem and the call negotiates the !--- appropriate connection with the far-end modem. no cdp enable ! interface Serial1:23 no ip address no ip directed-broadcast encapsulation ppp dialer rotary-group 2 isdn switch-type primary-5ess isdn incoming-voice modem no cdp enable !
```

```
interface Serial2:23 no ip address no ip directed-
broadcast encapsulation ppp dialer rotary-group 2 isdn
switch-type primary-5ess isdn incoming-voice modem no
cdp enable ! interface Serial3:23 no ip address no ip
directed-broadcast encapsulation ppp dialer rotary-group
2 isdn switch-type primary-5ess isdn incoming-voice
modem no cdp enable ! interface FastEthernet0 no ip
address no ip directed-broadcast shutdown ! interface
Group-Async1 !--- This interface is configured for Async
Dialin and Dialout in the T1 PRI. !--- Without this
interface, Async calls cannot be made. no ip address no
ip directed-broadcast async mode interactive dialer in-
band dialer rotary-group 1 !--- Group-Async 1 is a
member of the rotary group. !--- The rotary group
configuration is in interface Dialer 1. no cdp enable
group-range 1 96 !--- Group-range indicates the
asynchronous interfaces !--- which come under the Group-
Async interface. ! interface Dialer1 ip address 10.1.1.1
255.255.255.192 no ip directed-broadcast encapsulation
ppp dialer in-band dialer idle-timeout 600 !--- Set an
idle-timeout to hold the ISDN line. !--- Idle timeout
for outgoing calls is 600 seconds (10 minutes). !--- If
the ISDN link is idle for more than 600 seconds, it will
be dropped. dialer map ip 10.1.1.2 name remoteAsync01
modem-script kelly broadcast 9996200
!--- Dialer map statements for the remote router
remoteAsync01. !--- The name must match the one used by
the remote router to identify itself. !--- Use the modem
chat script "kelly" for this connection.

 dialer-group 1
 !--- Apply interesting traffic definition from the
dialer-list 1. ppp authentication chap ! interface
Dialer2 !--- The dialer rotary-group 2 command in Int
s0:23 activates the interface !--- Dialer2 for inbound
and outbound ISDN calls.

 ip address 10.1.1.65 255.255.255.192
 no ip directed-broadcast
 encapsulation ppp
 dialer in-band
 dialer idle-timeout 600
 dialer map ip 10.1.1.66 name remoteISDN01 broadcast
9996100
 dialer-group 1
 ppp authentication chap
!
no ip http server
ip classless

ip route 10.1.200.0 255.255.255.0 10.1.1.2
!--- Static route for the 10.1.200.0/24 network. !---
Interesting Traffic for that network !--- will be sent
to interface Dialer1 and the router !--- will initiate
the outbound call for Asynchronous connectivity.

ip route 10.1.201.0 255.255.255.0 10.1.1.66
!--- Static route for the 10.1.201.0/24 network. !---
Interesting traffic for that network !--- will be sent
to interface Dialer2 and the router !--- will initiate
the outbound call for ISDN BRI connectivity.

!
dialer-list 1 protocol ip permit
```

```
!--- Interesting traffic is defined by the Protocol IP.
!--- This is applied to interface Dialer1 and Dialer2
using the dialer-group 1 command. !--- The specified
dialer-list number must be the same !--- as the dialer-
group number; in this example, defined to be "1."

!
line con 0
 transport input none
line 1 96

script dialer kelly
!--- Enables the chat script kelly configured globally.

 modem InOut
 transport preferred none
 transport output none
line aux 0
line vty 0 4
 login
!
end
```

RemoteAsync01

```
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname remoteAsync01
!

!
username AS5300 password 0 xxxx

!
modemcap entry default
!--- A modemcap named "default" will be applied !--- to
lines one through eight of Async interfaces. ! interface
Ethernet0 ip address 10.1.200.1 255.255.255.0 no ip
directed-broadcast ! interface Serial0 no ip address no
ip directed-broadcast shutdown ! interface Serial1 no ip
address no ip directed-broadcast shutdown ! interface
Async1 ip address 10.1.1.2 255.255.255.192 no ip
directed-broadcast encapsulation ppp dialer idle-timeout
600 async mode interactive !--- Enables the slip and ppp
EXEC commands.

 ppp authentication chap
!
no ip http server
ip classless

ip route 0.0.0.0 0.0.0.0 10.1.1.1
!--- Default static route for the outgoing packets. !
line con 0 transport input none line 1 8 login local
modem InOut modem autoconfigure type default !--- Apply
the modemcap "default" (configured globally) to
initialize the modem. !--- Refer to the Modem-Router
Connection Guide for more information. transport input
all autoselect during-login autoselect ppp speed 38400
flowcontrol hardware line aux 0 line vty 0 4 ! end
```

```
Remote ISDN01

!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname remoteISDN01
!


!
username AS5300 password 0 xxxx
!--- Usernames for local authentication of the call. !--
- The client presents the username/password !--- and the
AS5300 authenticates the peer. !--- This local database
of usernames and passwords are !--- compared when chap
PPP authentication is negotiated !--- between the AS5300
and remoteISDN01 routers. ! isdn switch-type basic-5ess
!--- Switch-type for this 2503. Obtain this information
from the Telco. . ! interface Ethernet0 ip address
10.1.201.1 255.255.255.0 no ip directed-broadcast !
interface Serial0 no ip address no ip directed-broadcast
shutdown ! interface Serial1 no ip address no ip
directed-broadcast shutdown ! interface BRI0 ip address
10.1.1.66 255.255.255.192 no ip directed-broadcast
encapsulation ppp dialer idle-timeout 600 dialer-group 1
isdn switch-type basic-5ess ppp authentication chap ! no
ip http server ip classless ip route 0.0.0.0 0.0.0.0
10.1.1.65 !--- Default static route for the outgoing
packets. ! dialer-list 1 protocol ip permit ! line con 0
transport input none line aux 0 line vty 0 4 ! end
```

Verifiëren

Deze sectie verschaft informatie die u kunt gebruiken om te bevestigen dat uw configuratie correct werkt.

Bepaalde opdrachten met **show worden ondersteund door de tool** Output Interpreter (alleen voor geregistreerde klanten). Hiermee kunt u een analyse van de output van opdrachten met **show genereren.**

- **ISDN-status tonen** - garandeert dat de router correct met de ISDN-switch communiceert. In de output verifieert dat Layer 1 Status ACTIEF is en dat de Layer 2 Status status = MULTIPLE_FRAME_ESTABLISHED verschijnt. Deze opdracht geeft ook het aantal actieve oproepen weer.
- **toon PPP multilink** - Informatie over multilink bundels die actief zijn. Deze opdracht moet worden gebruikt om de multilink-verbinding te controleren.
- **Toon dialer [interface type number]** - Toont algemene diagnostische informatie voor interfaces ingesteld voor DDR. Als het dialer goed op kwam, zou de status Kiezer de datalink-laag-upbericht moeten verschijnen. Als de fysieke laag omhoog lijkt, dan kwam het lijnprotocol naar boven, maar het Network Control Protocol (NCP) niet. De bron- en doeladressen van het pakket dat het draaien in gang heeft gezet, worden in de lijn met de reden van de bel weergegeven. Deze showopdracht geeft ook de configuratie van de timer en de tijd weer voor de verbindingstijden.
- **tonen de gebruikersgebruikersnaam detail** - toont parameters voor de specifieke gebruiker

zoals het IP-adres dat is toegewezen, PPP en PPP bundelparameters, enzovoort. Als uw versie van Cisco IOS-software deze opdracht niet ondersteunt, gebruikt u de opdracht showgebruiker.

- **Toon dialer kaart** - Toont geconfigureerde dynamische en statische dialerkaarten. Deze opdracht kan worden gebruikt om te zien of er een dynamische dialerkaart is gemaakt. Zonder een dialerkaart kunt u geen pakketten routeren.
- **toon ISDN service** - controleer de status van de B kanalen. (Deze opdracht is alleen bedoeld voor toegangsservers die PRI/T1-controllers ondersteunen.)
- **Geef gebruiker** op: om asynchrone/synchrone gebruikers weer te geven die momenteel zijn aangesloten.

Hieronder zijn enkele showcommando output voor succesvolle gesprekken. Let op de bouten en de opmerkingen in de resultaten. Vergelijk de uitvoer die u behaalt met het onderstaande resultaat.

De volgende output wordt verkregen voordat u de verbinding met Remote ISDN01 en RemoteAsync01-routers instelt.

```
AS5300#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     171.68.0.0/28 is subnetted, 1 subnets
C       171.68.186.48 is directly connected, Ethernet0
     10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.1.1.0/26 is directly connected, Dialer1
C       10.1.1.64/26 is directly connected, Dialer2
S       10.1.201.0/24 [1/0] via 10.1.1.66
S       10.1.200.0/24 [1/0] via 10.1.1.2
```

De volgende uitvoer wordt verkregen na het opzetten van de verbinding met routers van Remote ISDN01 en RemoteAsync01.

```
AS5300#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     171.68.0.0/28 is subnetted, 1 subnets
C       171.68.186.48 is directly connected, Ethernet0
     10.0.0.0/8 is variably subnetted, 6 subnets, 3 masks
C       10.1.1.2/32 is directly connected, Dialer1
C       10.1.1.0/26 is directly connected, Dialer1
C       10.1.1.66/32 is directly connected, Dialer2
C       10.1.1.64/26 is directly connected, Dialer2
```

```
S       10.1.201.0/24 [1/0] via 10.1.1.66
S       10.1.200.0/24 [1/0] via 10.1.1.2


AS5300#show ip route connected
     171.68.0.0/28 is subnetted, 1 subnets
C       171.68.186.48 is directly connected, Ethernet0
     10.0.0.0/8 is variably subnetted, 6 subnets, 3 masks
C       10.1.1.2/32 is directly connected, Dialer1
C       10.1.1.0/26 is directly connected, Dialer1
C       10.1.1.66/32 is directly connected, Dialer2
C       10.1.1.64/26 is directly connected, Dialer2


AS5300#show controllers t1 0
T1 0 is up.
  Applique type is Channelized T1
  Cablelength is long gain36 0db
  No alarms detected.
  alarm-trigger is not set
  Version info of slot 0:  HW: 4, PLD Rev: 0

Manufacture Cookie Info:
    EEPROM Type 0x0001, EEPROM Version 0x01, Board ID 0x42,
    Board Hardware Version 1.32, Item Number 800-2540-02,
    Board Revision A0, Serial Number 11493161,
    PLD/ISP Version 0.0, Manufacture Date 12-Dec-1998.

Framing is ESF, Line Code is B8ZS, Clock Source is Line Primary.
    Data in current interval (197 seconds elapsed):
    0 Line Code Violations, 0 Path Code Violations
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
!--- Output suppressed. AS5300#show int s0:23
Serial0:23 is up, line protocol is up (spoofing)
  Hardware is DSX1
  MTU 1500 bytes, BW 64 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, loopback not set
  DTR is pulsed for 1 seconds on reset
  Last input 00:00:06, output 00:00:06, output hang never
  Last clearing of "show interface" counters 11:43:21
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
     Conversations  0/1/16 (active/max active/max total)
     Reserved Conversations 0/0 (allocated/max allocated)
     Available Bandwidth 48 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     5075 packets input, 25767 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     2 input errors, 0 CRC, 1 frame, 0 overrun, 0 ignored, 1 abort
     5073 packets output, 25904 bytes, 0 underruns
     0 output errors, 0 collisions, 13 interface resets
     0 output buffer failures, 0 output buffers swapped out
     2 carrier transitions
  Timeslot(s) Used:24, Transmitter delay is 0 flags


AS5300#show users
    Line       User       Host(s)              Idle       Location
*  0 con 0               idle                 00:00:00
  11 tty 11   remoteAsyn  Async interface      00:05:40    PPP: 10.1.1.2
```

```
Interface      User        Mode                Idle      Peer Address
Se0:21         remoteISDN   Sync PPP            00:06:12  PPP: 10.1.1.66

remoteAsync01#show users
    Line       User        Host(s)             Idle      Location
*  0 con 0                 idle                00:00:00
   1 tty 1     AS5300       Async interface     00:07:27  PPP: 10.1.1.1
   2 tty 2                  Modem Autoconfigure 00:00:00
   3 tty 3                  Modem Autoconfigure 00:00:00
   4 tty 4                  Modem Autoconfigure 00:00:01
   5 tty 5                  Modem Autoconfigure 00:00:00
   6 tty 6                  Modem Autoconfigure 00:00:00
   7 tty 7                  Modem Autoconfigure 00:00:00
   Interface   User         Mode                    Idle     Peer Address

remoteISDN01#show users
    Line       User        Host(s)             Idle      Location
*  0 con 0                 idle                00:00:00
   Interface   User        Mode                Idle      Peer Address
   BR0:1       AS5300       Sync PPP            00:09:09  PPP: 10.1.1.65


AS5300#show isdn history
--------------------------------------------------------------------------------
                              ISDN CALL HISTORY
--------------------------------------------------------------------------------
Call History contains all active calls, and a maximum of 100 inactive calls.
Inactive call data will be retained for a maximum of 15 minutes.


--------------------------------------------------------------------------------
Call    Calling     Called      Remote  Seconds Seconds Seconds Charges
Type    Number      Number      Name    Used    Left    Idle    Units/Currency
--------------------------------------------------------------------------------

Out    ---N/A---    9996200    +oteAsync01     187                      0
Out    ---N/A---    9996200    +oteAsync01      56                      0
Out    ---N/A---    9996200    +oteAsync01     469     305     294      0
Out    ---N/A---    9996100    +moteISDN01     105     509      90      0
--------------------------------------------------------------------------------


AS5300#show isdn active
--------------------------------------------------------------------------------
                              ISDN ACTIVE CALLS
--------------------------------------------------------------------------------
Call    Calling     Called      Remote  Seconds Seconds Seconds Charges
Type    Number      Number      Name    Used    Left    Idle    Units/Currency
--------------------------------------------------------------------------------
Out    ---N/A---    9996100    +moteISDN01     152     449     150      0
Out    ---N/A---    9996200    +oteAsync01     133     491     108      0
--------------------------------------------------------------------------------


AS5300#show isdn status
Global ISDN Switchtype = primary-5ess
ISDN Serial0:23 interface
        dsl 0, interface ISDN Switchtype = primary-5ess
    Layer 1 Status:
        ACTIVE
    Layer 2 Status:
        TEI = 0, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED
    Layer 3 Status:
        2 Active Layer 3 Call(s)
        CCB:callid=809E, sapi=0, ces=0, B-chan=23, calltype=VOICE
```

```
        CCB:callid=809F, sapi=0, ces=0, B-chan=22, calltype=DATA
    Active dsl 0 CCBs = 2
    The Free Channel Mask:  0x801FFFFF
    Number of L2 Discards = 1, L2 Session ID = 10
!--- Output suppressed. AS5300#Ping 10.1.201.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.201.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/33/36 ms

AS5300#Ping 10.1.200.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.200.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/141/148 ms

AS5300#show isdn service
PRI Channel Statistics:
ISDN Se0:23, Channel [1-24]
  Configured Isdn Interface (dsl) 0
   Channel State (0=Idle 1=Proposed 2=Busy 3=Reserved 4=Restart 5=Maint_Pend)
    Channel :  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
    State   :  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2 2 3
   Service State (0=Inservice 1=Maint 2=Outofservice)
    Channel :  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
    State   :  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 2
!--- Output suppressed. AS5300#show modem
 Codes:
   * - Modem has an active call
   C - Call in setup
   T - Back-to-Back test in progress
   R - Modem is being Reset
   p - Download request is pending and modem cannot be used for taking calls
   D - Download in progress
   B - Modem is marked bad and cannot be used for taking calls
   b - Modem is either busied out or shut-down
   d - DSP software download is required for achieving K56flex connections
   ! - Upgrade request is pending
```

	Avg Hold	Inc calls		Out calls		Busied	Failed	No	Succ
Mdm	Time	Succ	Fail	Succ	Fail	Out	Dial	Answer	Pct.
1/0	00:00:00	0	0	0	0	0	0	0	0%
1/1	00:00:00	0	0	0	0	0	0	0	0%
1/2	00:00:00	0	0	0	0	0	0	0	0%
1/3	00:00:00	0	0	0	0	0	0	0	0%
1/4	00:00:00	0	0	0	0	0	0	0	0%
1/5	00:00:00	0	0	0	0	0	0	0	0%
1/6	00:00:00	0	0	0	0	0	0	0	0%
1/7	00:00:00	0	0	0	0	0	0	0	0%
1/8	00:00:00	0	0	0	0	0	0	0	0%
1/9	00:00:00	0	0	0	0	0	0	0	0%
* **1/10**	**00:02:21**	**0**	**0**	**5**	**5**	**0**	**0**	**0**	**50%**
1/11	00:03:11	0	0	23	6	0	0	0	79%
1/12	00:00:00	0	0	0	0	0	0	0	0%
1/13	00:00:00	0	0	0	0	0	0	0	0%
1/14	00:00:00	0	0	0	0	0	0	0	0%

!--- Output suppressed.

Problemen oplossen

Deze sectie bevat informatie waarmee u problemen met de configuratie kunt oplossen.

Bronnen voor probleemoplossing

- [Problemen oplossen bij ISDN-oproepen](#) - Gebruik voor probleemoplossing bij ISDN-oproepen.
- [PRI ISDN-callin](#) - Bevat aanvullende informatie over problemen met ISDN-oproepen.
- [T1 Problemen oplossen](#) -Gebruik dit stroomschema als u vermoedt dat het T1-circuit niet goed werkt.
- [T1 PRI-probleemoplossing](#) - procedure voor probleemoplossing voor ISDN PRI-circuits
- [Loopback Tests voor T1/56K lijnen](#) - Gebruik om te verifiëren dat de T1 poort op de router correct werkt.
- [Gebruik de optie ISDN-status voor BRI probleemoplossing](#) - gebruik dit document voor probleemoplossing in BRI.
- [Problemen oplossen ISDN BRI Layer 3 met de bestandsindeling ISDN Q931](#) - Gebruik dit document voor problemen oplossen bij ISDN Layer 3.

Opdrachten voor troubleshooting

Bepaalde opdrachten met **show worden ondersteund door de tool** [Output Interpreter (alleen voor geregistreerde klanten). Hiermee kunt u een analyse van de output van opdrachten met](#) **show genereren.**

Opmerking: Voordat u **debug-**opdrachten afgeeft, raadpleegt u [Belangrijke informatie over debug-opdrachten](#).

- **debug dialer** - Wanneer DDR op de interface is ingeschakeld, geeft deze opdracht informatie weer over de oorzaak van een aanroep (de Dialing Cause genoemd).
- **debug ISDN Q931** - Voor het controleren van ISDN-verbindingen wanneer uitgaande oproepen worden gestart.
- **debug ppp onderhandeling** - Om te zien of een client PPP onderhandeling passeert. Een hoog aantal gelijktijdige PPP-onderhandelingen kunnen de router CPU's overweldigen.
- **debug van PPP-verificatie** - Om te zien of een client voor verificatie zorgt. Als u een versie voorafgaand aan Cisco IOS release 11.2 gebruikt, gebruikt u in plaats daarvan de opdracht Prisma-ketens debug.
- **debug** van **PPP** - om protocolfouten en foutstatistieken weer te geven die bij PPP-verbindingsonderhandeling en -handeling zijn gekoppeld.

Opdrachten voor probleemoplossing in de modem

- **debug chat** - Om de uitvoering van het chat script te zien wanneer een oproep wordt gestart.
- **bug van modem** - Om te zien of de router de juiste signalen van de modem ontvangt.
- **debug** van **modem** csm - voor het instellen van CSM-debug (modembeheer).

Uitvoer voor probleemoplossing

Hieronder staan de debug-uitgangen voor een succesvol uitgaande oproep. Let op de bouten en de opmerkingen in de resultaten. Vergelijk de uitvoer die u behaalt met het onderstaande resultaat.

[Doorvoerverbinding afbreken van AS5300 T1 PRI naar RemoteAsync01 router](#)

```
AS5300#debug isdn q931
ISDN Q931 packets debugging is on
AS5300#debug chat
Chat scripts activity debugging is on
AS5300#debug dialer events
Dial on demand events debugging is on
AS5300#show debug
Dial on demand:
  Dial on demand events debugging is on
PPP:
  PPP protocol negotiation debugging is on
ISDN:
  ISDN Q931 packets debugging is on
  ISDN Q931 packets debug DSLs. (On/Off/No DSL:1/0/-)
  DSL   0 --> 7
  1 1 1 1 - - - -


Chat Scripts:
Chat scripts activity debugging is on


AS5300#ping 10.1.200.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.200.1, timeout is 2 seconds:


Dec 30 17:59:16.675: As12 DDR: rotor dialout [priority]
Dec 30 17:59:16.675: As12 DDR: Dialing cause ip (s=10.1.1.1, d=10.1.200.1)
```
!--- The dialing cause is a ping for 10.1.200.1. !--- ICMP is tagged as interesting. Dec 30
17:59:16.675: As12 DDR: Attempting to dial 9996200 Dec 30 17:59:16.675: CHAT12: Attempting async
line dialer script Dec 30 17:59:16.675: CHAT12: Dialing using Modem script: **kelly**
 & System script: none
 *!--- Uses the Chat script **kelly** to Dialout.*

```
Dec 30 17:59:16.675: CHAT12: process started
Dec 30 17:59:16.675: CHAT12: Asserting DTR
Dec 30 17:59:16.675: CHAT12: Chat script kelly started
Dec 30 17:59:16.675: CHAT12: Sending string: atdt\T<9996200>
```
!--- The Chat script kelly uses the Telephone no in Interface Dialer 1 to Dialout. Dec 30
17:59:16.675: CHAT12: Expecting string: CONNECT Dec 30 17:59:16.755: ISDN Se0:23: **TX -> SETUP pd
= 8 callref = 0x00B1**
!--- Outgoing ISDN Q.931 SETUP message. Dec 30 17:59:16.755: Bearer Capability i = 0x8090A2 Dec
30 17:59:16.755: Channel ID i = 0xA98397 Dec 30 17:59:16.759: Called Party Number i = 0xA1,
'9996200', Plan:ISDN, Type:National Dec 30 17:59:16.823: ISDN Se0:23: RX <- CALL_PROC pd = 8
callref = 0x80B1 Dec 30 17:59:16.823: Channel ID i = 0xA98397 Dec 30 17:59:17.023: ISDN Se0:23:
RX <- ALERTING pd = 8 callref = 0x80B1..... Success rate is 0 percent (0/5) AS5300# Dec 30
17:59:26.115: ISDN Se0:23: **RX <- CONNECT pd = 8 callref = 0x80B1**
!--- Received Q.931 CONNECT message. Dec 30 17:59:26.119: ISDN Se0:23: TX -> CONNECT_ACK pd = 8
callref = 0x00B1 Dec 30 17:59:32.119: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to
9996200 Dec 30 17:59:49.347: CHAT12: Completed match for expect: CONNECT Dec 30 17:59:49.347:
CHAT12: Sending string: \c Dec 30 17:59:49.347: CHAT12: Chat script kelly finished, status =
Success Dec 30 17:59:49.351: **Di1 IPCP: Install route to 10.1.1.2**
!--- A route to the peer is installed. Dec 30 17:59:51.351: **%LINK-3-UPDOWN: Interface Async12,
changed state to up**
```
Dec 30 17:59:51.351: As12 DDR: Dialer statechange to up
Dec 30 17:59:51.351: As12 DDR: Dialer call has been placed
Dec 30 17:59:51.351: As12 PPP: Treating connection as a callout
Dec 30 17:59:51.351: As12 PPP: Phase is ESTABLISHING, Active Open [0 sess, 1 load]
Dec 30 17:59:51.351: As12 LCP: O CONFREQ [Closed] id 149 len 25
Dec 30 17:59:51.351: As12 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:51.351: As12 LCP:    AuthProto CHAP (0x0305C22305)
```

```
Dec 30 17:59:51.351: As12 LCP:    MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:51.351: As12 LCP:    PFC (0x0702)
Dec 30 17:59:51.351: As12 LCP:    ACFC (0x0802)
Dec 30 17:59:53.351: As12 LCP: TIMEout: State REQsent
Dec 30 17:59:53.351: As12 LCP: O CONFREQ [REQsent] id 150 len 25
Dec 30 17:59:53.351: As12 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.351: As12 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.351: As12 LCP:    MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:53.351: As12 LCP:    PFC (0x0702)
Dec 30 17:59:53.351: As12 LCP:    ACFC (0x0802)
Dec 30 17:59:53.511: As12 LCP: I CONFREQ [REQsent] id 53 len 25
Dec 30 17:59:53.511: As12 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.511: As12 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.511: As12 LCP:    MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:59:53.511: As12 LCP:    PFC (0x0702)
Dec 30 17:59:53.511: As12 LCP:    ACFC (0x0802)
Dec 30 17:59:53.511: As12 LCP: O CONFACK [REQsent] id 53 len 25
Dec 30 17:59:53.511: As12 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.511: As12 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.511: As12 LCP:    MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:59:53.511: As12 LCP:    PFC (0x0702)
Dec 30 17:59:53.511: As12 LCP:    ACFC (0x0802)
Dec 30 17:59:53.543: As12 LCP: I CONFACK [ACKsent] id 150 len 25
Dec 30 17:59:53.543: As12 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:59:53.543: As12 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:59:53.543: As12 LCP:    MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:59:53.543: As12 LCP:    PFC (0x0702)
Dec 30 17:59:53.543: As12 LCP:    ACFC (0x0802)
Dec 30 17:59:53.543: As12 LCP: State is Open
```

!--- LCP negotiation is complete. Dec 30 17:59:53.543: As12 PPP: Phase is AUTHENTICATING, by both [0 sess, 1 load] Dec 30 17:59:53.543: As12 CHAP: O CHALLENGE id 25 len 27 from "AS5300" Dec 30 17:59:53.655: As12 CHAP: I CHALLENGE id 27 len 34 from "remoteAsync01" Dec 30 17:59:53.655: As12 CHAP: O RESPONSE id 27 len 27 from "AS5300" Dec 30 17:59:53.671: As12 CHAP: I RESPONSE id 25 len 34 from "remoteAsync01" Dec 30 17:59:53.671: As12 CHAP: O SUCCESS id 25 len 4 Dec 30 17:59:53.783: As12 CHAP: I SUCCESS id 27 len 4 *!--- Two-way CHAP authentication is successful.* Dec 30 17:59:53.783: As12 PPP: Phase is UP [0 sess, 1 load] Dec 30 17:59:53.783: As12 IPCP: O CONFREQ [Closed] id 25 len 10 Dec 30 17:59:53.783: As12 IPCP: Address 10.1.1.1 (0x03060A010101) Dec 30 17:59:53.783: As12 CDPCP: O CONFREQ [Closed] id 25 len 4 Dec 30 17:59:53.783: As12 IPCP: I CONFREQ [REQsent] id 27 len 10 Dec 30 17:59:53.783: As12 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:59:53.783: As12 IPCP: O CONFACK [REQsent] id 27 len 10 Dec 30 17:59:53.783: As12 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:59:53.911: As12 IPCP: I CONFACK [ACKsent] id 25 len 10 Dec 30 17:59:53.911: As12 IPCP: Address 10.1.1.1 (0x03060A010101) Dec 30 17:59:53.911: As12 IPCP: State is Open Dec 30 17:59:53.911: As12 DDR: dialer protocol up Dec 30 17:59:53.927: As12 LCP: I PROTREJ [Open] id 54 len 10 protocol CDPCP (0x820701190004) Dec 30 17:59:53.927: As12 CDPCP: State is Closed Dec 30 17:59:54.783: %LINEPROTO-5-UPDOWN: Line protocol on Interface Async12, changed state to up Dec 30 17:59:54.783: As12 PPP: Outbound cdp packet dropped, CDPCP is Closed [starting negotiations] Dec 30 17:59:54.783: As12 CDPCP: State is Closed Dec 30 17:59:54.783: As12 PPP: Outbound cdp packet dropped, CDPCP is Closed [starting negotiations] Dec 30 17:59:54.783: As12 CDPCP: State is Closed Dec 30 17:59:54.783: As12 PPP: Outbound cdp packet dropped, CDPCP is Closed [starting negotiations] Dec 30 17:59:54.783: As12 CDPCP: State is Closed Dec 30 17:59:54.787: As12 CDPCP: TIMEout: State Closed Dec 30 17:59:54.787: As12 CDPCP: State is Listen remoteAsync01#**debug ppp negotiation**

```
PPP protocol negotiation debugging is on
remoteAsync01#
Dec 30 17:58:54: As1 LCP: I CONFREQ [Closed] id 150 len 25
Dec 30 17:58:54: As1 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP:    MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:58:54: As1 LCP:    PFC (0x0702)
Dec 30 17:58:54: As1 LCP:    ACFC (0x0802)
Dec 30 17:58:54: As1 LCP: Lower layer not up, Fast Starting
Dec 30 17:58:54: As1 PPP: Treating connection as a dedicated line
Dec 30 17:58:54: As1 PPP: Phase is ESTABLISHING, Active Open [0 sess, 0 load]
Dec 30 17:58:54: As1 LCP: O CONFREQ [Closed] id 53 len 25
```

```
Dec 30 17:58:54: As1 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP:    MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:58:54: As1 LCP:    PFC (0x0702)
Dec 30 17:58:54: As1 LCP:    ACFC (0x0802)
Dec 30 17:58:54: As1 LCP: O CONFACK [REQsent] id 150 len 25
Dec 30 17:58:54: As1 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:54: As1 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:58:54: As1 LCP:    MagicNumber 0x4A997A3A (0x05064A997A3A)
Dec 30 17:58:54: As1 LCP:    PFC (0x0702)
Dec 30 17:58:54: As1 LCP:    ACFC (0x0802)
Dec 30 17:58:54: %LINK-3-UPDOWN: Interface Async1, changed state to up
Dec 30 17:58:55: As1 LCP: I CONFACK [ACKsent] id 53 len 25
Dec 30 17:58:55: As1 LCP:    ACCM 0x000A0000 (0x0206000A0000)
Dec 30 17:58:55: As1 LCP:    AuthProto CHAP (0x0305C22305)
Dec 30 17:58:55: As1 LCP:    MagicNumber 0x67B12AE8 (0x050667B12AE8)
Dec 30 17:58:55: As1 LCP:    PFC (0x0702)
Dec 30 17:58:55: As1 LCP:    ACFC (0x0802)
Dec 30 17:58:55: As1 LCP: State is Open
```

!--- LCP negotiation is complete. Dec 30 17:58:55: As1 PPP: Phase is AUTHENTICATING, by both [0 sess, 0 load] Dec 30 17:58:55: As1 CHAP: O CHALLENGE id 27 len 34 from "remoteAsync01" Dec 30 17:58:55: As1 CHAP: I CHALLENGE id 25 len 27 from "AS5300" Dec 30 17:58:55: As1 CHAP: O RESPONSE id 25 len 34 from "remoteAsync01" Dec 30 17:58:55: As1 CHAP: I RESPONSE id 27 len 27 from "AS5300" Dec 30 17:58:55: As1 CHAP: I SUCCESS id 25 len 4 Dec 30 17:58:55: As1 CHAP: O SUCCESS id 27 len 4 *!--- Two-way CHAP authentication is successful.* Dec 30 17:58:55: As1 PPP: Phase is UP [0 sess, 1 load] Dec 30 17:58:55: As1 IPCP: O CONFREQ [Closed] id 27 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:58:55: As1 IPCP: I CONFREQ [REQsent] id 25 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.1 (0x03060A010101) Dec 30 17:58:55: As1 IPCP: O CONFACK [REQsent] id 25 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.1 (0x03060A010101) Dec 30 17:58:55: As1 CDPCP: I CONFREQ [Not negotiated] id 25 len 4 Dec 30 17:58:55: As1 LCP: O PROTREJ [Open] id 54 len 10 protocol CDPCP (0x820701190004) Dec 30 17:58:55: As1 IPCP: I CONFACK [ACKsent] id 27 len 10 Dec 30 17:58:55: As1 IPCP: Address 10.1.1.2 (0x03060A010102) Dec 30 17:58:55: As1 IPCP: State is Open Dec 30 17:58:55: **As1 IPCP: Install route to 10.1.1.1**

!--- A route to the peer is installed. Dec 30 17:58:56: %LINEPROTO-5-UPDOWN: **Line protocol on Interface Async1,**
  changedstate to up

[Uitbel-uitbellen vanaf AS5300 naar Remote ISDN01-router](#)

```
AS5300#show debug
Dial on demand:
  Dial on demand events debugging is on
PPP:
  PPP protocol negotiation debugging is on
ISDN:
  ISDN Q931 packets debugging is on
  ISDN Q931 packets debug DSLs. (On/Off/No DSL:1/0/-)
  DSL  0 --> 7
  1 1 1 1 - - - -
Chat Scripts:
  Chat scripts activity debugging is on
AS5300#ping 10.1.201.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.201.1, timeout is 2 seconds:

Dec 30 18:12:42.811: Se0:23 DDR: rotor dialout [priority]
Dec 30 18:12:42.815: Se0:23 DDR: Dialing cause ip (s=10.1.1.65, d=10.1.201.1)
```
!--- The dialing cause is a ping for 10.1.201.1. !--- ICMP is tagged as interesting. Dec 30

18:12:42.815: Se0:23 DDR: Attempting to dial 9996100 Dec 30 18:12:42.815: **ISDN Se0:23: TX -
>SETUP pd = 8 callref = 0x00B2**
!--- Outgoing ISDN Q.931 SETUP message. Dec 30 18:12:42.815: Bearer Capability i = 0x8890 Dec 30
18:12:42.815: Channel ID i = 0xA98396 Dec 30 18:12:42.819: Called Party Number i = 0xA1,
'9996100', Plan:ISDN, Type:National Dec 30 18:12:42.867: ISDN Se0:23: RX <- CALL_PROC pd = 8
callref = 0x80B2 Dec 30 18:12:42.867: Channel ID i = 0xA98396 Dec 30 18:12:43.127: ISDN Se0:23:
RX <- CONNECT pd = 8 callref = 0x80B2 *!--- Received Q.931 CONNECT message.* Dec 30 18:12:43.135:
%LINK-3-UPDOWN: Interface Serial0:21, changed state to up Dec 30 18:12:43.135: Se0:21 PPP:
Treating connection as a callout Dec 30 18:12:43.135: Se0:21 PPP: Phase is ESTABLISHING, Active
Open [0 sess, 1 load] Dec 30 18:12:43.135: Se0:21 LCP: O CONFREQ [Closed] id 25 len 15 Dec 30
18:12:43.139: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.139: Se0:21 LCP:
MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:12:43.139: ISDN Se0:23: TX -> CONNECT_ACK pd =
8 callref = 0x00B2 Dec 30 18:12:43.167: Se0:21 LCP: I CONFREQ [REQsent] id 55 len 15 Dec 30
18:12:43.167: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.167: Se0:21 LCP:
MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:12:43.167: Se0:21 LCP: O CONFACK [REQsent] id
55 len 15 Dec 30 18:12:43.167: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:12:43.167:
Se0:21 LCP: MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:12:43.175: Se0:21 LCP: I CONFACK
[ACKsent] id 25 len 15 Dec 30 18:12:43.175: Se0:21 LCP: AuthProto CHAP (0x0305C22305) Dec 30
18:12:43.175: Se0:21 LCP: MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:12:43.179: Se0:21
LCP: State is Open
!--- LCP negotiation is complete. Dec 30 18:12:43.179: Se0:21 PPP: Phase is AUTHENTICATING, by
both [0 sess, 1.!!!! Success rate is 80 percent (4/5), round-trip min/avg/max = 32/33/36
msAS5300# load] Dec 30 18:12:43.179: Se0:21 CHAP: O CHALLENGE id 13 len 27 from "AS5300" Dec 30
18:12:43.227: Se0:21 CHAP: I CHALLENGE id 36 len 33 from "remoteISDN01" Dec 30 18:12:43.227:
Se0:21 CHAP: O RESPONSE id 36 len 27 from "AS5300" Dec 30 18:12:43.251: Se0:21 CHAP: I SUCCESS
id 36 len 4 Dec 30 18:12:43.263: Se0:21 CHAP: I RESPONSE id 13 len 33 from "remoteISDN01" Dec 30
18:12:43.263: Se0:21 **CHAP: O SUCCESS id 13 len 4**
!--- Two-way CHAP authentication is successful. Dec 30 18:12:43.263: Se0:21 PPP: Phase is UP [0
sess, 1 load] Dec 30 18:12:43.263: Se0:21 IPCP: O CONFREQ [Closed] id 13 len 10 Dec 30
18:12:43.267: Se0:21 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30 18:12:43.287: Se0:21 IPCP:
I CONFREQ [REQsent] id 36 len 10 Dec 30 18:12:43.287: Se0:21 IPCP: Address 10.1.1.66
(0x03060A010142) Dec 30 18:12:43.287: Se0:21 IPCP: O CONFACK [REQsent] id 36 len 10 Dec 30
18:12:43.287: Se0:21 IPCP: Address 10.1.1.66 (0x03060A010142) Dec 30 18:12:43.287: Se0:21 CDPCP:
I CONFREQ [Not negotiated] id 36 len 4 Dec 30 18:12:43.291: Se0:21 LCP: O PROTREJ [Open] id 26
len 10 protocol CDPCP (0x820701240004) Dec 30 18:12:43.307: Se0:21 IPCP: I CONFACK [ACKsent] id
13 len 10 Dec 30 18:12:43.307: Se0:21 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30
18:12:43.307: Se0:21 IPCP: State is Open Dec 30 18:12:43.307: Se0:21 DDR: dialer protocol up Dec
30 18:12:43.307: Di2 **IPCP: Install route to 10.1.1.66**
!--- A route to the peer is installed. Dec 30 18:12:44.263: **%LINEPROTO-5-UPDOWN: Line protocol
on Interface Serial0:21,
 changed state to up**
Dec 30 18:12:49.135: **%ISDN-6-CONNECT: Interface Serial0:21 is now connected to
 9996100 remoteISDN01**

remoteISDN01#**debug ppp negotiation**
PPP protocol negotiation debugging is on
remoteISDN01#**debug isdn q931**
ISDN Q931 packets debugging is on
remoteISDN01#**show debug**
PPP:
  PPP protocol negotiation debugging is on
ISDN:
  ISDN Q931 packets debugging is on
remoteISDN01#
Dec 30 18:13:04: ISDN BR0: RX <- SETUP pd = 8 callref = 0x1B
Dec 30 18:13:04:   Bearer Capability i = 0x8890
Dec 30 18:13:04:   Channel ID i = 0x89
Dec 30 18:13:04:   Signal i = 0x40 - Alerting on - pattern 0
Dec 30 18:13:04:   Called Party Number i = 0xA1, '2019996100', Plan:ISDN,
 Type:National
Dec 30 18:13:04: ISDN BR0: Event: Received a DATA call from <unknown> on B1 at
 64 Kb/s
Dec 30 18:13:04: ISDN BR0: Event: Accepting the call id 0x2D
Dec 30 18:13:04: %LINK-3-UPDOWN: Interface BRI0:1, changed state to up

```
Dec 30 18:13:04: BR0:1 PPP: Treating connection as a callin
Dec 30 18:13:04: BR0:1 PPP: Phase is ESTABLISHING, Passive Open [0 sess, 1 load]
Dec 30 18:13:04: BR0:1 LCP: State is Listen
Dec 30 18:13:04: ISDN BR0: TX -> CALL_PROC pd = 8  callref = 0x9B
```

!--- Outgoing ISDN Q.931 SETUP message. Dec 30 18:13:04: Channel ID i = 0x89 Dec 30 18:13:04: ISDN BR0: TX -> CONNECT pd = 8 callref = 0x9B Dec 30 18:13:05: BR0:1 LCP: I CONFREQ [Listen] id 25 len 15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP: MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:13:05: BR0:1 LCP: O CONFREQ [Listen] id 55 len 15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP: MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:13:05: BR0:1 LCP: O CONFACK [Listen] id 25 len 15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP: MagicNumber 0x4AA54104 (0x05064AA54104) Dec 30 18:13:05: ISDN BR0: RX <- CONNECT_ACK pd = 8 callref = 0x1B *!--- Received Q.931 CONNECT message.* Dec 30 18:13:05: Signal i = 0x4F - Alerting off Dec 30 18:13:05: BR0:1 LCP: I CONFACK [ACKsent] id 55 len 15 Dec 30 18:13:05: BR0:1 LCP: AuthProto CHAP (0x0305C22305) Dec 30 18:13:05: BR0:1 LCP: MagicNumber 0x575DC27D (0x0506575DC27D) Dec 30 18:13:05: BR0:1 LCP: State is Open Dec 30 18:13:05: BR0:1 PPP: Phase is AUTHENTICATING, by both [0 sess, 1 load] Dec 30 18:13:05: BR0:1 CHAP: O CHALLENGE id 36 len 33 from "remoteISDN01" Dec 30 18:13:05: BR0:1 CHAP: I CHALLENGE id 13 len 27 from "AS5300" Dec 30 18:13:05: BR0:1 CHAP: Waiting for peer to authenticate first Dec 30 18:13:05: BR0:1 CHAP: I RESPONSE id 36 len 27 from "AS5300" Dec 30 18:13:05: BR0:1 CHAP: O SUCCESS id 36 len 4 Dec 30 18:13:05: BR0:1 CHAP: Processing saved Challenge, id 13 Dec 30 18:13:05: BR0:1 CHAP: O RESPONSE id 13 len 33 from "remoteISDN01" Dec 30 18:13:05: BR0:1 CHAP: I SUCCESS id 13 len 4 *!--- Two-way CHAP authentication is successful.* Dec 30 18:13:05: BR0:1 PPP: Phase is UP [0 sess, 0 load] Dec 30 18:13:05: BR0:1 IPCP: O CONFREQ [Closed] id 36 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address 10.1.1.66 (0x03060A010142) Dec 30 18:13:05: BR0:1 CDPCP: O CONFREQ [Closed] id 36 len 4 Dec 30 18:13:05: BR0:1 IPCP: I CONFREQ [REQsent] id 13 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30 18:13:05: BR0:1 IPCP: O CONFACK [REQsent] id 13 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address 10.1.1.65 (0x03060A010141) Dec 30 18:13:05: BR0:1 IPCP: I CONFACK [ACKsent] id 36 len 10 Dec 30 18:13:05: BR0:1 IPCP: Address 10.1.1.66 (0x03060A010142) Dec 30 18:13:05: BR0:1 IPCP: State is Open Dec 30 18:13:05: BR0:1 LCP: I PROTREJ [Open] id 26 len 10 protocol CDPCP (0x8207 01240004) Dec 30 18:13:05: BR0:1 CDPCP: State is Closed Dec 30 18:13:05: BR0 **IPCP: Install route to 10.1.1.65**

!--- A route to the peer is installed. Dec 30 18:13:06: %LINEPROTO-5-UPDOWN: **Line protocol on Interface BRI0:1,**
 changed state to up

```
Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
 [starting negotiations]
Dec 30 18:13:06: BR0:1 CDPCP: State is Closed
Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
 [starting negotiations]
Dec 30 18:13:06: BR0:1 CDPCP: State is Closed
Dec 30 18:13:06: BR0:1 PPP: Outbound cdp packet dropped, CDPCP is Closed
 [starting negotiations]
Dec 30 18:13:06: BR0:1 CDPCP: State is Closed
Dec 30 18:13:06: BR0:1 CDPCP: TIMEout: State Closed
Dec 30 18:13:06: BR0:1 CDPCP: State is Listen
Dec 30 18:13:10: %ISDN-6-CONNECT: Interface BRI0:1 is now connected to AS5300
```

Gerelateerde informatie

- [Een toegangsserver met PRI's configureren voor inkomende asynchrone en ISDN-oproepen](#)
- [Dialoogvenster en uitbellen op dezelfde T1/E1-PRI circuits configureren](#)
- [NAS configureren voor toegang tot basisbellen](#)
- [Configuratiehandleiding voor kiesoplossingen](#)
- [De betekenis van debug van ISDN Q931 Oorzaak van verbroken verbinding](#)
- [Kiezertechnologie: Technieken voor probleemoplossing](#)
- [T1 PRI-probleemoplossing](#)
- [Modules voor probleemoplossing](#)
- [Opdrachten voor modem](#)

- [Technische ondersteuning voor bellen en toegang verkrijgen](#)
- [Technische ondersteuning en documentatie – Cisco Systems](#)